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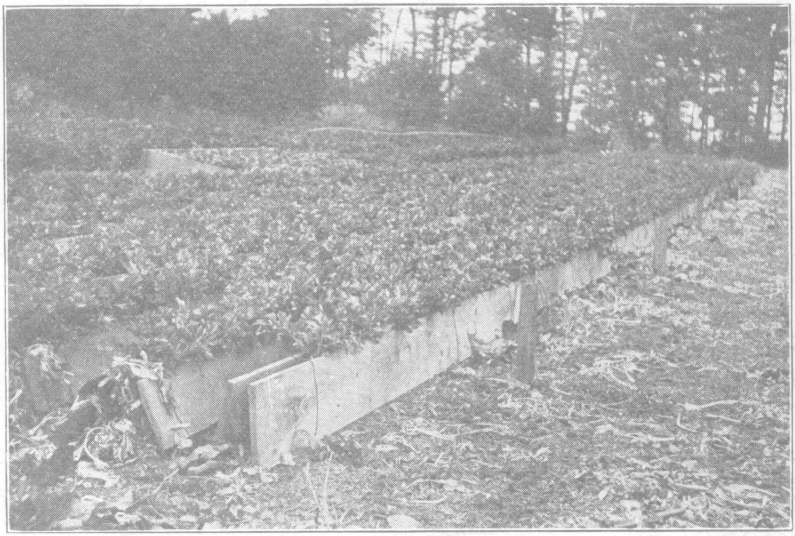
CELERY GROWING



Blanching with boards

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CELERY GROWING

Celery is of commercial importance in the muck soil areas of Ohio as a shipping commodity and in the vicinity of the larger cities for local market use. The popularity of this crop has grown until no home garden is complete without it. The intensive market gardener considers celery one of his most profitable crops, and overhead irrigation systems have rapidly extended its culture.

Celery may be grown successfully in all parts of the State. However, in this climate the crop is separated into two cultural periods, the early spring and late fall crops. Celery demands warm, sunny days, cool nights, and a large amount of water to develop its finest quality, and the early spring and late fall seasons of Ohio usually provide this requirement.

Soils best adapted to celery growing are low, moist, and well drained, especially muck soils having the water table within a foot or two of the surface. The crop can be grown, however, on almost any type of soil provided enough plant food is present and enough moisture supplied during the season. Clay loams are benefited by a deep fall plowing and frequent harrowing before planting. Early plowing is desirable with all types of soil, which must be worked up in a fine and smooth condition just previous to planting.

FERTILIZERS

Celery is a rapid growing crop and a heavy feeder, requiring heavy fertilization and a soil of loose texture well filled with organic matter. Because of this soil requirement, stable manure reinforced with acid phosphate is used in quantities of 25 tons or more per acre. In sections where manure is scarce, large amounts of commercial fertilizers are used and a leguminous cover crop is grown the preceding season. On light-colored soils using commercial fertilizers, from 1000 to 1500 pounds per acre of a 3-8-6 is advisable, or if a fair application of manure is available 1000 pounds of a 2-14-2 may be used. This should be followed by top dressings of nitrate of soda at the rate of 150 to 200 pounds per acre, after the seedlings are established in the soil.

On dark-colored soils, commercial fertilizer, from 1000 to 1500 pounds per acre of a 3-12-4, is best applied. If clover is turned under a 0-14-4 may be substituted, followed by top dressings of nitrate of soda. In muck soils, approximately 1500 pounds per acre of a 0-10-10 should be used, or in combination with manure 1500 pounds per acre of 16 percent acid phosphate may be applied for reinforcing.

VARIETIES

White Plume, one of the earliest, is a self-blanching variety. The stalks are tall and white, but not as good quality as Golden Self-Blanching.

Golden Self-Blanching is one of the most important commercial varieties and a favorite of the home gardener. It is satisfactory for either early or late crop; stalks short, compact, blanch easily to a creamy white.

Giant Pascal is a green-stemmed variety of good quality, yielding large bunches, having thick, heavy stalks. It is planted only as a late variety.

Winter Queen has a shorter, stalkier growth than Giant Pascal, blanches more rapidly and is of good quality. A good, late variety.

SOWING THE SEED

The quality of seed used is of great importance. Many failures are caused by poor seed, giving either low germination, being diseased, or producing plants low in vitality. A poorly bred variety will break up into various forms, many of which are undesirable and many pithy stalks will result.

Early Crop.—For an early crop of celery, seed is sown about the first week of March. Sowing should be early enough to have plants the proper size ready to set in the field as soon as weather conditions will permit. The seed may be sown in drills 2 inches apart in a hot bed or in flats placed in a hot bed, if no greenhouse or planthouse is available.

The soil of the seedbed should consist of a rich, loose loam containing an abundant supply of organic matter, and must not pack or become hard. As celery seed is slow to germinate, the soil must be made fine and smooth before seeding. The seed should be sown thickly enough to give a good stand without crowding, and not be covered more than $\frac{1}{8}$ inch with soil. After sowing, the soil is sprinkled and covered with burlap or paper which is not to be removed until the seedlings are showing.

Late Crop.—The seed for the late crop may be sown in April or early May in cold frames or flats placed in cold frames. Often the plants for this crop are seeded in beds in the field. Before sowing, the surface of the bed is raked smooth and after the seed is scattered it is again raked lightly and firmed slightly by means of a board or light roller.

Plants may be grown for the home garden by planting the seed in a cigar box or in a small tray in the house and then trans-

planting to other trays. As a rule, it is more economical to purchase plants in the small numbers needed for home gardening. However, when grown at home they have the advantage of having a ball of dirt adhering to their roots when transplanted, thus insuring a better start than when the plants are bought.

Special care must be given during the first two weeks that the soil does not dry out, and that the plants are not over-watered from that period on.

HOT BEDS

There are two types of hot beds in use, the surface bed, or one in which the frame is placed on a flat pile of manure; and the pit bed, in which the manure and frame are placed in an excavation. The pit bed is more permanent and satisfactory, especially if celery is included in regular rotation. The hot bed is preferably built in a protected place near the house but well out of the shade of trees and buildings, near a water supply and in a well-drained spot, facing south.

In constructing the hot bed the pit is dug in the fall and filled with mulch to keep it from freezing. The pit will be 18 inches deep and wide enough, approximately 6 feet 4 inches, to take care of the frame. Drainage may be aided by digging a trench around the pit.

The frame may be made by driving 2 by 4's at the corners of the pit. The two posts at the south side of the frame should be 6 inches lower than at the north side, giving the bed a 6-inch southern slope to afford a fuller use of sunlight. Boards 1 by 12 inches are then nailed to the posts on the north and south sides. At the ends, boards 12 inches wide at one end and 6 inches wide at the opposite end are used.

Fresh horse manure without much straw or litter should be used for heating the bed. A pile is forked over every few days, the colder manure being thrown towards the center. This allows the pile to heat evenly without burning. After the manure has heated thru, it should be spread evenly in the pit, each forkful being shaken out until there is a sufficient quantity to make a bed 18 inches thick when tramped down.

After the manure has been tramped fairly solid, it is advisable to shake in 3 or 4 inches of loose straw as this gives an equal distribution of heat. From 4 to 6 inches of soil containing a large amount of organic matter such as well-rotted manure is used. If the seed is sown in flats, from 2 to 4 inches of soil will be sufficient. After the soil is in and the sash are in place, the temperature will run high.

A thermometer can be placed in the bed and when the temperature recedes to 85°, the seed may be planted.

CARE OF SEEDLINGS

After plants are up they must have plenty of light, sunshine, and fresh air. Care must be taken that too much water is not given, as "damping off" fungi are a serious menace to the plants at this stage and large numbers may be lost. When the rough leaves appear, the seedlings are transplanted to other flats or hot beds. An inch and a half each way is generally enough space, tho some growers plant 2 inches each way.

Transplanting in the seedbed has two purposes: first, celery seedlings have a straight tap root, which is broken in transplanting, causing a mass of fibrous roots to be formed; second, when transplanting is practiced there is no necessity for thinning the plants in the seedbed and a more uniform stand of plants is obtained. As the season advances and the weather becomes warmer the seedlings are shifted from the hot bed to the cold frame.

PLANTING

Plants for the early crop should not be set in the open until after danger of severe frosts is past, which is usually from May 7 to 15. Strong, vigorous plants at this time should develop a crop by the first of August. The late plants may be set from the middle of June to the middle of July.

The ideal time to set plants is just before a shower or on a moist, cloudy day. In bright weather it is best to set late in the afternoon. The soil should be fine, smooth and moist before transplanting is begun. The seedbed or flats should be watered thoroly a few hours before digging and the plants lifted carefully to retain a good root system. If the plants are more than 5 inches high, it is an advantage to clip the tops to reduce transpiration.

The distance of planting depends on season, methods of blanching, and intensiveness practiced. Where the blanching is to be done by boards, plants may be set from 4 to 6 inches in the row and rows as close as 18 inches. This practice is used with the yellow self-blanching varieties. If blanching is done by soil, the distance between rows is from 5 to 6 feet. Occasionally double-row planting is practiced, especially in home gardens. Two rows are planted 6 inches apart and the plants 6 inches apart in the row.

CULTURE

Celery must be kept continuously growing if stalks of best quality are to be produced, and cultivation must be started as soon as possible after transplanting, care being taken not to throw any dirt in the hearts of the plants. Altho celery is a heavy feeder and demands a large supply of moisture, it is a shallow-rooted crop and cultivation must be shallow. Hand hoeing may be necessary between the plants.

Cultivation must be given after every rain and as often at other times as is necessary to destroy the weeds and maintain a fine dust mulch. In the intensive gardening sections, the rows are planted too close to permit horse cultivation and the fields are worked with hand cultivators. This allows working close to the plants without any danger of injury.

BLANCHING

The markets demand well-blanched celery. Blanching consists in growing the leaf stalks in a subdued light. Growth under such conditions destroys the coloring matter in the leaf stalks and prevents the formation of additional coloring, leaving the stalks with a more crisp and tender texture.

There are many methods of blanching, but on a commercial scale the only ones of importance in this State are by boards and by banking with soil. The early crop, using a self-blanching variety, is blanched with boards as banking with soil has a tendency to cause rust. However, the fall crop is blanched by soil which produces celery of excellent flavor and protects the plants from light freezes. If the crop is to be stored it will blanch in storage if the temperature is not too low, and will keep better than if blanched in the field.

In blanching by boards, sound lumber is best. Hemlock is most commonly used. The boards are 1 inch thick, 12 inches wide, and 12, 14, or 16 feet long. Small cleats nailed across the ends and middles of the boards will prevent warping and splitting to a large extent. The early crop should be ready for blanching by early July, and boards are placed on edge close to the row on both sides and fastened by heavy, double hooks placed over the upper edges of the boards. From two to three weeks will be required for blanching the early crop, depending upon the rate of growth and weather conditions. As soon as the crop is properly blanched, it should be harvested; if left too long it loses in weight and flavor.

The blanching of fall and winter crops is generally accomplished by the use of soil. The banking is usually done by the use of a plow or celery hiller, which throws the soil in ridges up against

the plants. To prevent the soil from covering the hearts of the plants, the rows are first cultivated and a small amount of soil banked against the base of the plants by hand to straighten up the stalks and hold them together. Then the hiller is employed, and as the crop grows it is used to keep the soil thrown up around the plants.

HARVESTING

The crop is harvested when the plants have attained the proper size and are well blanched. Using a sharp knife or spade, the roots are cut a short distance below the surface of the soil. The plants are gathered as soon as cut and taken to the packing shed. Here the outside leaves are trimmed off and the roots cut to a conical shape. They are then washed thoroly in clean, cold water which helps to keep them in a fresh condition. After being allowed to drain thoroly they are tied in bunches of 12 plants. If they are to be shipped, they are packed in tight crates which are lined with heavy wrapping paper.

STORING

When the crop is to be sold in late fall, it may be banked as high as possible with soil and covered with straw to protect the tops from light freezes. If the crop is lifted, it must be put in a cool, fairly moist place. It should be stored before hard freezing weather and the tops must be dry.

Using blanching boards for field storage

Trenching is a popular method of storage. A trench 10 to 12 inches deep is dug in the garden or field where the crop is grown. It should be deep enough to allow not more than 2 inches of the tops to be above ground. The tops are then covered by placing boards nailed in a V shape over them. If the weather becomes warm, ventilation is secured by raising these boards. As it becomes colder, soil and straw must be thrown over the boards for protection. If they are to be kept until after hard freezing weather is at hand, they may be further protected by an additional covering of manure.

DISEASES

Early blight is a common disease, infecting the foliage. It appears as yellowish-green spots on the leaf and as these spots spread the leaves turn yellow and die. This disease starts about June and develops rapidly during warm, wet weather. Spraying with Bordeaux mixture as for late blight will control this disease.

Late blight appears in early summer and late fall as irregular rusty brown spots on the outside leaves, spreading to the other leaves and giving the plant a burned appearance. This disease causes a soft rot in celery in storage. Late blight can be controlled by spraying with Bordeaux mixture, 5-5-50, once before the seedlings are transplanted in the field following at intervals of every two weeks until plants are ready to be blanched.